

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 3-6 and 8-10 are currently being prosecuted. The Examiner is respectfully requested to reconsider her rejections in view of the amendments and remarks that are set forth below.

Rejections under 35 U.S.C. 103

Claims 1-10 stand rejected under 35 U.S.C. 103 as being obvious over Althausen et al. (IBM Technical Disclosure Bulletin, Vol 23, No. 7A) in view of Murakami et al. (U.S. Patent No. 6,896,357 B2). This rejection is respectfully traversed.

Concerning Althausen et al., the Examiner states that the reference shows a compound inkjet print with modules 10 and 12 which provide ink droplets of different sizes. The Examiner further states that the reference shows an ink detecting module and lead screw to check the operation and relative position of the print heads. The Examiner further states that the reference shows more than one tuning mechanisms to adjust the relevant position of the printheads where the tuning mechanism includes a base, a screw adjusting device and a sliding piece. The Examiner admits that Althausen et al. does not show that the first print head is N pico liter and the second head is M pico liter with N being larger than M.

The Examiner relies on Murakami et al. to show ink droplets of a same color for the purpose of providing high-gradation and high-quality images to be printed in high speeds using dots of different sizes. The Examiner feels it would be obvious to one of ordinary skill in the art to utilize ink droplets of the same color from a print head N having pico liter and the second printhead having M pico liter as taught by Murakami et al. into Althausen et al.

Applicants submit that the present invention claims are not obvious over either of these references or their combination. It should be noted that claim 1 has now been amended to include the limitations of claim 2 and that claim 6 has been amended to include the limitations of claim 7. The Examiner has previously indicated regarding claims 2 and 7 that the Althausen et al. reference shows an ink detecting module to check the operation and relative position of the

printheads. Applicants submit that Althausen et al. does not teach these features and that accordingly amended claims 1 and 6 are not obvious thereover.

The Althausen et al. reference shows a print system with two or more printheads with different resolution. A server motor and a lead screw are used to control the printheads by moving the whole printhead set together with the lead screw. In describing the ink detecting module, the Examiner merely refers to Fig. 1. Applicants submit that no such module shown in Fig. 1. Applicants submit that the text of this reference also does not describe such an ink detecting module. Similarly, Murakami et al. does not show the module or any device for moving the relative position of the printheads. Accordingly, the Applicants submit that this feature is not shown in either of the references.

In the present application, the two printheads 111 and 112 are carried by a cartridge 120. The cartridge moves along guide rod 130 which is fixed to the frame of the printer. As shown in Fig. 2 of the present application, the cartridge includes a mechanism to change the relative distance between the two printheads. This arrangement uses a screw adjusting device 220, guide rods 222 and springs 231 to control the relative distance between the two printheads. This is an important feature of the present application and works with the ink detecting module to ascertain the correct positioning of the heads to obtain the desired arrangement of ink droplets.

Neither of the references teach the use of such ink detecting modules and its control of a tuning mechanism to adjust the spacing between two printheads. Applicants disagree with the Examiner that these features are shown in Althausen et al. in any fashion. For these reasons, Applicants submit that claim 1 is not obvious over either of these references or their combination. Likewise, claim 6 which is similar to claim 1 is likewise allowable.

Claims 3-5 and 8-10 depend from these allowable independent claims and as such are also considered to be allowable. In addition, each of these claims describe other features that make them additionally allowable. Thus, claims 3 and 8 discuss the presence of more than one tuning mechanism to adjust the relative position of the printheads. This feature is not shown in the references. Likewise, claims 4 and 9 discuss in detail the various parts of the tuning mechanism. This is also not seen in the references. Claims 5 and 10 discuss that the tuning

mechanism is a motor control module which is also not shown in the references. For these reasons, the Applicants submit that all the claims are now allowable.

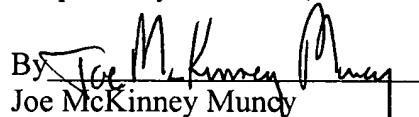
In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert F. Gnuse (Reg. No. 27,295) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: February 6, 2006

Respectfully submitted,

By 

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